



SuccessMaker®

Alignments to SuccessMaker

Providing rigorous intervention
for K-8 learners with unparalleled precision

Colorado Mathematics Standards Code	Colorado Mathematics Academic Standards, Grade 8	SuccessMaker Item Description	Item ID
1	Number and Quantity		
8.NS.A	The Number System: Know that there are numbers that are not rational, and approximate them by rational numbers.		
8.NS.A.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2).	Drag rational and irrational values to their correct positions on a number line.	SMMA_LO_02141
	For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.		
	Academic Context and Connections		
	Entrepreneurial Skills: Inquiry/Analysis		
1	Investigate rational and irrational numbers and their relative approximate positions on a number line.	Drag rational and irrational values to their correct positions on a number line.	SMMA_LO_02141
2	Algebra and Functions		
8.EE.A	Expressions & Equations: Work with radicals and integer exponents.		
8.EE.A.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	Write very small numbers in scientific notation.	SMMA_LO_02070
		Write very large numbers in scientific notation.	SMMA_LO_02071
	For example, estimate the population of the United States as 3 times 10^8 and the population of the world as 7 times 10^9 , and determine that the world population is more than 20 times larger.		
8.EE.B	Expressions & Equations: Understand the connections between proportional relationships, lines, and linear equations.		
8.EE.B.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	Identify the rate of change and the y-intercept of two linear functions, one represented in a verbal description, and one represented either graphically or algebraically.	SMMA_LO_02102
		Graph proportional relationships and interpret the unit rate as the slope of the graph.	SMMA_LO_02073
	For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.		
8.EE.B.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .	Use similar triangles to explain why the slope m is the same between any two distinct points on a nonvertical line in the coordinate plane.	SMMA_LO_02075
	Academic Context and Connections		
	Entrepreneurial Skills: Inquiry/Analysis		
1	Make connections between representations of linear growth.	Given a set of graphs of relations, identify which graphs represent	SMMA_LO_01835

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		functions.	
		Given a list of ordered pairs of a relation, identify two ordered pairs that show the relation is not a function.	SMMA_LO_01811
		Complete an input/output table and identify the algebraic equation that describes the two-step rule.	SMMA_LO_01807
		Complete an input/output table and identify the algebraic equation that describes the one-step rule.	SMMA_LO_01806
		Given a graph of a relation, identify two ordered pairs on the graph that show the relation is not a function.	SMMA_LO_01812
4	Compare, contrast, and make claims with proportional relationships based on properties of equations, tables, and/or graphs.	Solve a problem in context using proportions.	SMMA_LO_01635
8.EE.C	Expressions & Equations: Analyze and solve linear equations and pairs of simultaneous linear equations.		
8.EE.C.8	Analyze and solve pairs of simultaneous linear equations.		
8.EE.C.8.b	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.	If a system of linear equations has 0 or infinitely many solutions, solve it by inspection. If it has 1 solution, solve it either algebraically or by graphing.	SMMA_LO_02133
		Model a real-world problem with a system of linear equations. Then solve it by locating the intersection point of the graphs of the two equations.	SMMA_LO_02134
		Identify the solution to a system of linear equations by locating the point of intersection on its graph.	SMMA_LO_02080
	For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6.		
8.EE.C.8.c	Solve real-world and mathematical problems leading to two linear equations in two variables.	Model a real-world problem with a system of linear equations. Then solve it by locating the intersection point of the graphs of the two equations.	SMMA_LO_02134
	For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.		
	Academic Context and Connections		
	Entrepreneurial Skills: Critical Thinking/Problem Solving		
1	Solve problems involving linear equations and systems of linear equations.	Model a real-world problem with a system of linear equations. Then solve it by locating the intersection point of the graphs of the two equations.	SMMA_LO_02134
MP1	Make sense of problems and persevere in solving them.		
2	Solve problems that require a system of linear equations in two variables.	Model a real-world problem with a system of linear equations. Then solve it by locating the intersection point of the graphs of the two equations.	SMMA_LO_02134
MP6	Attend to precision.		
4	Solve equations and systems of equations and express solutions with accuracy that makes sense in the real-world context modeled by the equations.	Model a real-world problem with a system of linear equations. Then solve it by locating the intersection point of the graphs of the two equations.	SMMA_LO_02134
MP7	Look for and make use of structure.		

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5	Recognize the structure of equations and of systems of equations that produce one, infinitely many, or no solution.	If a system of linear equations has 0 or infinitely many solutions, solve it by inspection. If it has 1 solution, solve it either algebraically or by graphing.	SMMA_LO_02133
8.F.A	Functions: Define, evaluate, and compare functions.		
8.F.A.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Identify the rate of change and the y-intercept of two linear functions, one represented in a verbal description, and one represented either graphically or algebraically.	SMMA_LO_02102
	For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.		
8.F.A.3	Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	Derive the equation $y = mx$ for a line through the origin, and $y = mx + b$ for a line intercepting the vertical axis at b .	SMMA_LO_02076
	For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.		
8.F.B	Functions: Use functions to model relationships between quantities.		
	Academic Context and Connections		
	Entrepreneurial Skills: Literacy/Writing		
MP8	Look for and express regularity in repeated reasoning.		
4	Use strategies to calculate the rate of change in a linear function (slope) and use properties of linear functions to create equations.	Identify the rate of change and the y-intercept of two linear functions, one represented in a verbal description, and one represented either graphically or algebraically.	SMMA_LO_02102
3	Data, Statistics, and Probability		
8.SP.A	Statistics & Probability: Investigate patterns of association in bivariate data.		
8.SP.A.1	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	Identify positive, negative, or no association for sets of actual data.	SMMA_LO_01222
4	Geometry		
8.G.A	Geometry: Understand congruence and similarity using physical models, transparencies, or geometry software.		
8.G.A.1	Verify experimentally the properties of rotations, reflections, and translations:	Rotate a figure on a coordinate plane; verify properties of the rotation.	SMMA_LO_02121
		Reflect a figure on a coordinate plane over the x-axis, the y-axis, or the line $y = x$; verify properties of the rotation.	SMMA_LO_02122
		Translate a figure on a coordinate plane; verify properties of the rotation.	SMMA_LO_02123
8.G.A.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	Translate a figure on a coordinate plane.	SMMA_LO_02120
		Rotate a figure by 90, 180, or 270 degrees clockwise or	SMMA_LO_02104

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		counterclockwise on a coordinate plane.	
		Determine the algebraic expression used to find the coordinates of the image of a figure under a dilation with the origin as the center of dilation.	SMMA_LO_02142
		Translate a figure on a coordinate plane; verify properties of the rotation.	SMMA_LO_02123
8.G.A.4	Demonstrate that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	Identify the figure that is not similar to the others. (simple shapes, counterexample)	SMMA_LO_00649
8.G.B	Geometry: Understand and apply the Pythagorean Theorem.		
8.G.B.6	Explain a proof of the Pythagorean Theorem and its converse.	Explain a proof of the converse of the Pythagorean Theorem.	SMMA_LO_02132
		Explain a proof of the Pythagorean Theorem.	SMMA_LO_02131
8.G.B.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	Given two points on a coordinate grid, draw a right triangle whose hypotenuse connects the two points. Then use the Pythagorean Theorem to find the distance between the two points.	SMMA_LO_02100